Vestnik zoologii 31(1–2): 77–79, 1997

УДК 576.895.132

TETLEYUS GEKELMANI SP. N. (NEMATODA, OXYURIDA, THELASTOMATIDAE) FROM HIND GUT OF SCARABAEID LARVAE

S. E. Spiridonov

Institute of Parasitology, Russian Academy of Sciences, Leninskii pr., 33, 117071 Moscow, Russia

Accepted 21 February 1997

***Tetleyus gekelmani* sp. n. (Nematoda, Oxyurida, Thelastomatidae) із задньої кишки личинок пластинчастовусих жуків. Спірідонов С. Е.** — Описано новий вид оксіурідних нематод — *Tetleyus gekelmani* sp. n., з задньої кишки личинок жуків триби Melolonthini, зібраних у Цюрупінському районі Херсонської області. Він подібний до інших видів роду *Tetleyus* з личинок пластинчастовусих жуків — *T. pericopti* Dale, 1964 та *T. wiersi* Dale, 1965, але відрізняється формою хвостового кінця, положенням генітальних папіл, формою спікули, довжиною стравохода та кутикулярного личинкового чохлика самців. *T. gekelmani* sp. n. — перший вид тетлейусів, описаний з Палеарктичної області.
К л ю ч о в і   с л о в а: новий вид, нематоди, пластинчастовусі жуки, Україна.

***Tetleyus gekelmani* sp. n. (Nematoda, Oxyurida, Thelastomatidae) from Hind Gut of Scarabaeid Larvae. Spiridonov S. E.** — *Tetleyus gekelmani* sp. n. is described from hind gut of Melolonthini beetle larvae collected in Tsurupinsk district of Kherson region. *T. gekelmani* sp. n. is resembling other *Tetleyus* species described from scarabaeid larvae: *T. pericopti* Dale, 1964 and *T. wiersi* Dale, 1965 but differs in the tail shape, distribution of genital papillae, spicula shape, oesophagus and the length of alate juvenile cuticular sheath in males. *T. gekelmani* sp. n. is the first species of *Tetleyus* described from the Palearctic region.
K e y   w o r d s: new species, Nematoda, Melolonthini, Ukraine.

Nematodes of the family Thelastomatidae inhabit the hind gut of different arthropods: diplopods, cockroaches, beetles, tipulids and mole-crickets. It is presumed now, that all these arthropods are characterized by the bacterial fermentation of cellulose which occurs in the posterior divisions of arthropod intestine and thelastomatids are feeding mainly on the rich bacterial harvest in the lumen. It is only the larval stages of a beetles of Scarabaeidae family which can harbour the thelastomatids. Peculiar thelastomatids were described (Dale, 1964) from hind gut of New Zealand Scarabaeidae of the genus *Pericoptus*. It was found that males of these thelastomatids retain the IV stage juvenile alate cuticle on the surface and new genus *Tetleyus* was established for these nematodes. The nematodes of the genus *Tetleyus* were also found in the lucanid beetle and tipulid larvae (Dale, 1965, 1966). *Tetleyus* nematodes were recorded until now only from New Zealand. The description of new species of *Tetleyus* from South Ukraine is presented below.

Tetleyus gekelmani S p i r i d o n o v, sp. n. (Fig. 1)

Material: Holotype — ♂ (length 775 mm, maximal body diameter 90 mm, oesophagus length 200 mm, tail length 78 mm, spicula 57 mm); Paratypes 4 ♂, 4 ♀.

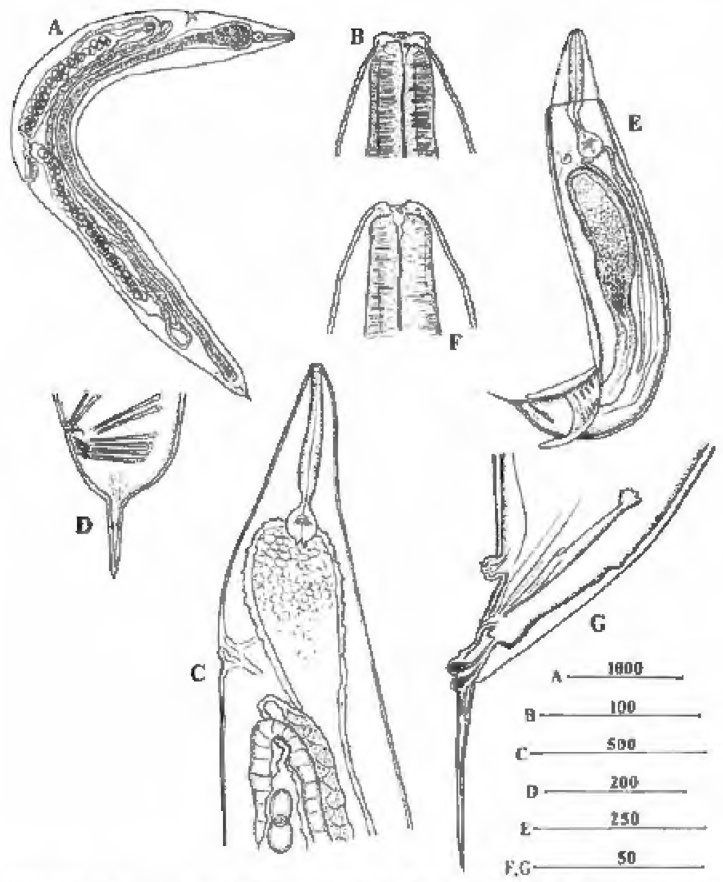
Measurements: Table 1.

Description: Male body spindle-shaped, colourless, covered with additional cuticular sheath with prominent alae of IV stage cuticle starting on the level of isthmus and ending on the cloaca level with posteriorly directed rounded edges. Body cuticle annulated with smooth surface only on cephalic capsula and on the dorsal side of tail over the dorsal cuticular thickening. Cuticular rings 4 mm wide on oesophagus level, 9 — 10 mm wide in the middle of the body

Measurements and de Man ratios of *Tetleyus gekelmani* sp. n. (in mm, means S.D. and range)

Размеры и индексы де Мана *Tetleyus gekelmani* sp. n. (в мкм; среднее значение, стандартное отклонение и пределы вариации)

	Males (n=5)	Females (n=4)
Length	913±131.4 (775-1045)	4987±1136(3590-6370)
Maximal diameter	102.4±7.5(90-110)	232±37.7(190-280)
Oesophagus length	204±11.4(190-220)	523±23.6(490-545)
Tail length	91.4±18.4(80-128)	275±51.9(220-340)
Excretory pore from ant.end	220.6±14.2(204-238)	785±118(620-900)
Spicula length	60.8±6.7(52-66)	—
a	8.9±0.8(7.7-9.9)	21.5±4.1(17.6-26.5)
b	4.5±0.8(3.7-5.5)	9.5±1.8(7.3-11.7)
c	10.1±1.8(8.7-12.7)	18.8±6.2(12.4-25.5)
V%	—	53±0.1(48-66)%



Terleyus gekelmani sp. n.. A — female; B — female, head end; C — female, anterior end; D — female tail; E — male; F — male, head end; G — male tail. (all in lateral view, bars in mm)

Terleyus gekelmani sp. n.: A — самка; B — головной конец самки; C — передний конец тела самки; D — хвостовой конец самки; E — самец; F — головной конец самца; G — хвостовой конец самца. Масштабная линейка в мкм

(beneath the IV-stage cuticle). Fine transversal striation covers body tail region. Cephalic capsule 35 mm wide and 17 — 18 mm long. Poorly conspicuous buccal cavity 6 — 7 mm wide and 6 — 8 mm long. Amphidial pouch and four sensillae (probably belonging to the cephalic circle) are located on the stoma level. Oesophagus with cylindrical corpus 20 mm diameter, divided from isthmus by prominent fibers and piriform bulb. Valve plates and posterior additional cuticular thickenings present in the bulb. Excretory pore on the level of the bulb or slightly behind. The only excretory vesicle can be distinguished. Testis flexure is in 20–30 mm behind the bulb. Different stages of spermatozoon maturation are present in testis lumen. Elongated spermatozoa (or spermatocytes) are localized in *vas deferens*. Copulatory apparatus consists of single rod-like spicule. Gubernaculum absent. Spicula with widened capitulum and very thin shaft. Two big preanal papillae are situated on the rounded median protuberance. A pair of small papillae can be observed on the cloaca level. Two pairs of papillae are situated posteriorly on the border between conical and filiform parts of a tail. A pair of thin ducts or papillae are present also on the filiform part of a tail. Cuticle is strongly thickened in dorsal part of the tail region.

Female body cylindrical with conically tapering anterior end and rounded tail with pin-shaped terminal part. Body colourless except the brown inner filling of intestine. No additional cuticular cover. Cuticle annulation visible only on the

anterior part of the body with ring width about 6-7 mm. Posteriorly cuticle annulation is nearly disappearing. Cephalic capsula without annulation, 35 mm long and 60 mm wide with prominent 8 pseudolabia anteriorly. Amphidial pouches and four sensillae can be distinguished on pseudolabia. Buccal cavity very shallow — 12 — 14 mm wide and only 3 — 4 mm long with narrow 10 mm long and 2 — 3 mm wide telostome. Oesophagus with widening posteriorly corpus and short isthmus with bundles of fibers on the border with corpus. Valves and posterior cuticular thickenings present in the bulb. Cuticular cardial lining protrudes into intestinal lumen. Proventricular part of intestine consists of hexagonal or polygonal cells. Excretory pore behind the bulb level, connected with prominent excretory vesicle. Four excretory channels are poorly visible. Median vulvar opening. Didelphic, with doubly reflexed ovaries. Long uteri filled with numerous elliptic eggs. Egg-shells smooth, without operculae, 67 — 74 × 38 — 47 mm. "Dilator ani" muscles well developed.

Type host and locality: *Tetleyus gekelmani* sp. n. nematodes were recovered from hind gut of 3 beetle larvae (Melolonthini) between 5 dissected. Larvae were collected from beneath the rotten wood trunk in pine plantation close to the road between the town of Tsurupinsk and Bolshiye Kopani village, October 26, 1995.

Deposition of type material: Holotype — male (lc 400) and female paratype (lc 401) are deposited in the collection of Moscow State University Zoological Museum. One paratype is deposited at Zoological Institute of Ukrainian Academy of Sciences. Other paratypes are stored in the Institute of Parasitology, Russian Academy of Sciences.

Differential diagnosis: Belonging to the genus *Tetleyus* Dale, 1964 the nematodes described above are characterized by the presence of alate IV-stage juvenile cuticle over mature males, possess two pairs of adanal papillae and have two pairs of postanal papillae. Position of excretory pore in these nematodes corresponds to that described for *Tetleyus*. *Tetleyus gekelmani* sp. n. is similar in morphology to the other species of the genus described from scarabaeid larvae: *T. pericopti* Dale, 1964 (type species) and, especially, to *T. miersi* Dale, 1965. Though *T. gekelmani* sp. n. males are smaller than those of *T. miersi* and de Man ratios "a" and "c" are lower in Ukrainian specimens, these two species are the closest ones with similar size of females and egg-shells and doubly reflexed ovaries. Despite similarity, *T. gekelmani* sp. n. can be distinguished from *T. miersi* by the distribution of papillae on male tail: *T. miersi* is characterized by two more prominent caudal papillae. Larval alate cuticle covers lesser length of *T. miersi* males, with posteriorward edges of alae at about 75% of the body length. Buccal cavity of *T. gekelmani* sp. n. females is narrower than in *T. miersi*. Excretory pore is situated more anteriorly in *T. gekelmani* sp. n. males. The most important difference is the spicula morphology (which is very stable specific feature in thelastomatids) : *T. miersi* males possess robust thick spicula, while *T. gekelmani* sp. n. males possess very thin rod-like spicula.

Etymology: The specific name is given after Mr. Andrei A. Gekelman, who invited the author to visit Kherson and enable the trip to Tsurupinsk region for nematode collection.

This work was supported by the RFBR grant 95-04-11503.

Dale P. S. Tetleyus pericopti n. gen. n. sp., a thelastomatid nematode from the larva of Pericoptus truncatus (Fab.) (Coleoptera: Dynastinae) // New Zealand Journ. of Science. – 1964. — 7, №4. — P. 589–595.

Dale P. S. Two new nematodes of the genus Tetleyus (Thelastomatidae) from insect larvae // Ibid. – 1965. — 8, №4. — P. 521—530.

Dale P. S. A key to nematodes of the genus Tetleyus (Thelastomatidae), and a description of Tetleyus fissoletos n. sp. // Ibid. — 1966. — 9, №1. — P. 161–165.